REMARKS

This Amendment, submitted in response to the Office Action dated July 23, 2007, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-10 and 13-16 are all the claims pending in the application.

I.   Claim Rejections under 35 U.S.C. § 103

Claims 1-3 and 5-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Reusens et al. (U.S. Patent No. 6,351,473).

A.   Claim 1

Applicant submits that claim 1 is patentable over the cited reference. For example, claim 1 recites, "wherein said means for producing said carrier constellation information is adapted to group carriers in subsets and to produce for at least one respective subset a limited set of parameter values <u>from which constellations of each carrier in said at least one respective subset can be derived through interpolation</u>." (emphasis added)

On page 3 of the Office Action, the Examiner maintains that Reusens fails to disclose, "the limited set of parameter values, carrier frequency, fi, among of data bits, bi, and power lever (gain), pi, can be derived through interpolation." Based on the Examiner's statement, it appears that the Examiner maintains that claim 1 requires the limited set of parameters to be derived through interpolation. As set forth in the underlined portion of claim 1 above, however, it is the *constellations* of each carrier that are derived through interpolation, not the limited set of parameters themselves (i.e., the constellations of claim 1 are *derived from* the limited set of parameters *through* interpolation). Regardless of the apparent misreading of the claimed

features, the Examiner previously rejected claim 1 under 35 U.S.C. § 102(e) and maintained that

Reusens disclosed the claimed feature. Now, the Examiner has rejected claim 1 under 35

U.S.C. § 103(a) and maintains that it would be obvious to modify Reusens to include the claimed

feature. For the following reasons, Applicant respectfully traverses this assertion.

Reusens is directed to a method for allocating data bits between a multi-carrier

transmitter and a receiver. A multicarrier transmission system is a system in which a transmitter

sends digital data packets modulated on a set of carriers to a receiver. A subset of the carriers

has frequencies in a predetermined frequency range which have a high risk of being affected by

narrowbanded interference. The data bits of the digital data packets that are allocated to the

subset of carriers having frequencies within these predetermined frequency ranges are allocated

to in a redundant way. The receiver is capable of measuring the amount of narrowbanded

interference that affects each carrier within the subset of the carriers that may be affected and can

re-combine data bits allocated to carriers in the subset which carry redundant data bits, so that

interference immunity is improved. See Abstract.

Applicant submits, however, there is absolutely no teaching or suggestion that carriers are

grouped in subsets and to produce for at least one respective subset a limited set of parameter

values from which constellations of each carrier in said at least one respective subset can be

derived through interpolation.

The Examiner asserts that frequencies f1 and f3 are in one subset and frequencies f2 and

f4 are in a second subset which the Examiner asserts teaches the claimed grouping carriers in

subsets. Therefore, it appears that the Examiner is citing the combination of subset f1/f3 and

subset f2/f4 for teaching a claimed carrier. The Examiner then goes on to say that the bit

allocation values, transmitted energy levels or gain and carrier identification information teach

the claimed parameter values. However, as set forth in the May 18, 2007 Response, at no point

are *constellations* for each carrier (f1, f2, f3, f4 as asserted by the Examiner) *derived through*

interpolation. This failure is most likely because Reusens is not at all concerned with the

derivation of carrier constellation information, but is directed to the redundancy of data bits so as

to prevent narrowband interference.

The aspects of Reusens cited by the Examiner, col. 10, lines 1-67 and col. 8, lines 11-24

disclose the components of a receiver R' which include a line interface, a digital converter, a

demodulator and a bit de-allocation means. Further, Reusens discloses the interpretation of

allocation messages by the receiver R' to determine the transmission levels of frequencies.

Further, via the allocation messages, a receiver R' knows which part of data bits are transmitted

twice. At no point, however, are constellations of <u>each carrier</u> in said at least one respective

<u>subset</u> derived through <u>interpolation</u>. Further, at no point are the bit allocation values, transmitted

energy levels or gain and carrier identification information, which the Examiner asserts teaches

the claimed parameter values, used to derive constellation information of each carrier in a subset.

On page 3 of the current Office Action, the Examiner responds to the arguments

presented in the May 18, 2007 Amendment, by maintaining that "interpolation" has not been

defined in claim 1. The fact that claim 1 does not specify a particular type of interpolation does

not render the claim indefinite or otherwise such that the prior art cannot be applied. Therefore,

Applicant is unsure as to the Examiner's intent when making this statement. Furthermore, the

term "interpolation" is not arbitrary. Accordingly, since Reusens fails to disclose the use of

interpolation, i.e., any type of interpolation, the reference fails to teach the claimed feature.

Additionally, on page 4 of the Office Action, the Examiner maintains that Applicant has not disclosed that the use of interpolation provides an advantage or any particular purpose, etc. On the contrary, on page 2 of the present Application, it is disclosed that, "by grouping the carriers in subsets and by transmitting for each subset only a limited set of parameter values as constellation information from which the constellation of each carrier in the subset can be derived through interpolation, the size of the constellation information message to be transferred is reduced significantly." Thus, the use of interpolation works, at least in part, to reduce the size of the message to be transferred and therefore provides an advantage in the present invention.

Finally, the Examiner maintains that Applicant's invention would perform equally well with the same structure of Reusens, such that it would be obvious to modify Reusens to obtain the invention. Applicant is unsure what standard the Examiner is applying in such a statement. Nevertheless, for the reason set forth above, Applicant submits that its invention would not perform equally well using the same structure as taught in Reusens. Thus, the Examiner has not provided a rational nor adequate reason for modifying Reusens to arrive at the claimed invention.

At least based on the foregoing, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 1.

B. Claims 2, 3,5 and 6

Since claims 2, 3, 5 and 6 are dependent upon claim 1, Applicant submits that such claims are patentable at least by virtue of their dependency.

C. Claim 7

Since claim 7 contains features that are analogous to the features discussed above for claim 1, Applicant submits that claim 7 is patentable for at least analogous reasons as claim 1.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art and Reusens et al. (U.S. Patent No. 6,351,473) as applied to claim 7 and in further view of Gultekin et al. (U.S. Patent No. 6,215,793). Claim 10, however, should be deemed allowable by virtue of its dependency to claim 7 for at least the reasons set forth above. Moreover, Gultekin does not cure the deficiencies of Reusens.

II.   Allowable Subject Matter

The Examiner has indicated that claims 4, 8 and 9 contain allowable subject matter and would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. At the present time, Applicant has not rewritten claims 4, 8 and 9 in independent form since Applicant believes claims 4, 8 and 9 will be deemed allowable, without amendment, by virtue of their dependency to claims 1 and 7 for at least the reasons set forth above.

III.   Newly Added Claims

Applicant has added new claims 13-16 which correspond to claims 5, 6 and 10, but are dependent upon claims 4, 8 and 9. Applicant submits that the subject matter of claims 13-16 is not taught in the art cited by the Examiner.

IV.   Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

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overpayments to said Deposit Account.

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Respectfully submitted,

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